

Appl. No. 10/008,459
Amdt. dated July 7, 2003
Reply to Office action of May 30, 2003

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (currently amended) A handheld tattooing apparatus, comprising;

a frame, a portion of which is constructed of magnetic material,

a plurality of electrical coils, each coil having a metallic core, each core having a rectilinear cross-section, each said rectilinear cross-section being substantially constant for at least seventy-five percent of the length of said core, each core having means for attachment to said frame in a position adjacent to said magnetic material, each coil being constructed of insulated electrical conducting wire, said wire being wound around said core, said wire being spatially fixed with respect to said core, wound with electrical conducting wire,

an electrical power supply connected to said electrical conducting wire, said electrical power supply being capable of providing electrical power to said coils,

an armature bar having a rectilinear cross-section and connected to said frame, said armature bar being located in a first position in proximity of the ends of said cores opposite said means for attachment with said frame, said armature bar being spring-biased away from said cores, said armature bar being attracted to said cores when said power supply provides electrical power to said coils,

~~one said core having a change in one of its cross-sectional dimensions at near its end closest to said armature bar,~~

one said core having an enlargement in said cross-section of said core at a location within twenty-five percent of the axial length of said core, measured from the end of said core closest to said armature bar,

means for disconnecting said electrical power when said armature bar has moved to a second position, and reconnecting said electrical power when armature bar has returned to said first position, said second position being closer to said cores than said first position,

a tattoo needle attached to said armature bar, said tattoo needle moving with the motion of said armature bar.

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2. (currently amended) A handheld tattoo apparatus, according to claim 1, further comprising:
means for aligning said rectilinear cross-section of said core rotationally with the attachment
surface of said connector bar frame.
3. (original) A handheld tattoo apparatus, according to claim 2, wherein said means for aligning is
a pin and mating hole.
4. (currently amended) A handheld tattoo apparatus, according to claim 1, wherein said ~~change to~~
~~said cross-sectional dimension is an increase to a larger dimension.~~ said enlargement in said cross-section
is created by increasing one dimension of said cross-section.
5. (canceled)
6. (canceled)
7. (withdrawn).
8. (withdrawn).
9. (withdrawn).
10. (withdrawn).
11. (withdrawn).
12. (withdrawn).
13. (new) A handheld tattooing apparatus, according to claim 1, wherein said enlargement of said cross-
section is created by an increase in two orthogonal dimensions in said cross-section.
14. (new) A handheld tattooing apparatus, comprising:
a frame, a portion of which is constructed of magnetic material,

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a plurality of electrical coils, each coil having a metallic core, each core having a rectilinear cross-section, first core having said rectilinear cross-section being of a first size, said first size being substantially constant for at least seventy-five percent of the length of said core, measured from the end of said core closest to said frame, each core having means for attachment to said frame in a position adjacent to said magnetic material, each coil being constructed of insulated electrical conducting wire, said wire being wound around said core, said wire being spatially fixed with respect to said core,

an electrical power supply connected to said electrical conducting wire, said electrical power supply being capable of providing electrical power to said coils,

an armature bar having a rectilinear cross-section and connected to said frame, said armature bar being located in a first position in proximity of the ends of said cores opposite said means for attachment with said frame, said armature bar being spring-biased away from said cores, said armature bar being attracted to said cores when said power supply provides electrical power to said coils,

said first core having a second size of said cross-section in proximity of the end of said core closest to said armature bar,

means for disconnecting said electrical power when said armature bar has moved to a second position, and reconnecting said electrical power when armature bar has returned to said first position, said second position being closer to said cores than said first position,

a tattoo needle attached to said armature bar, said tattoo needle moving with the motion of said armature bar.

15. (new) A handheld tattooing apparatus, according to claim 14, wherein said second size is larger than said first size caused by an increase in one dimension of said cross-section.

16. (new) A handheld tattooing apparatus, according to claim 14, wherein said second size is larger than said first size caused by an increase in two orthogonal dimensions of said cross-section.

17. (new) A handheld tattooing apparatus, according to claim 14, wherein said second size is smaller than said first size caused by a decrease in one dimension of said cross-section.

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18. (new) A handheld tattooing apparatus, according to claim 14, wherein said second size is smaller than said first size caused by a decrease in two orthogonal dimensions of said cross-section, said second size extending from the transition with said first size to the end of said core in proximity with said armature bar.

19. (new) A handheld tattooing apparatus, according to claim 14, wherein said second size is created by an increase in one dimension of said cross-section and a decrease in the other orthogonal dimension of said cross-section.

20. (new) An electromagnetic coil for a handheld tattooing apparatus, said coil having a metallic core, said core having a rectilinear cross-section, said core having an enlarged head end, thereby creating a smoother apparatus function.